

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~striketrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

1. (Previously Presented) A position control device for controlling a controlled axis in accordance with a command movement to drive a servomotor controlling the controlled axis, comprising:

means for calculating the position of the controlled axis corresponding to time on the basis of the command movement for the controlled axis;

means for calculating the position of a virtual axis moving at a fixed speed corresponding to time;

means for calculating position data of the controlled axis by calculating the calculated position of the controlled axis corresponding to time as a function of the calculated position of the virtual axis moving at a fixed speed corresponding to time;

means for storing the calculated position data on the calculated position of the controlled axis as a function of the calculated position of the virtual axis; and

means for controlling the virtual axis and driving the controlled axis in a manner such that the controlled axis synchronously follows the virtual axis as a master axis in accordance with the position stored in said means for storing the position data of the controlled axis.

2. (Previously Presented) A position control device for controlling a controlled axis in accordance with a command movement to drive a servomotor controlling the controlled axis, comprising:

means for acquiring the state of an I/O signal with respect to time obtained by an I/O signal control means using a ladder;

means for calculating the position of a virtual axis moving at a fixed speed corresponding to time;

means for synthesizing the acquired state of the I/O signal with respect to the calculated position of the virtual axis;

means for storing data on the acquired state of the I/O signal obtained by said means for acquiring the state of an I/O signal with respect to the calculated position of the virtual axis calculated by said means for calculating the position of a virtual axis; and

means for carrying out control of the I/O signal in accordance with the position of the virtual axis, based on the I/O signal state stored in said means for storing data on the acquired state of the I/O signal with respect to the calculated position of the virtual axis.

3. (Previously Presented) A position control device for controlling a controlled axis in accordance with a command movement to drive a servomotor controlling the controlled axis, comprising:

means for calculating the position of the controlled axis corresponding to time on the basis of the command movement for the controlled axis;

means for acquiring the state of an I/O signal with respect to time obtained by an I/O signal control means using a ladder;

means for calculating the position of a virtual axis moving at a fixed speed corresponding to time;

means for calculating position data on the calculated position of the controlled axis with respect to the calculated position of the virtual axis and the acquired state of the I/O signal;

means for storing the position data on the calculated position of the controlled axis with respect to the calculated position of the virtual axis and the acquired state of the I/O signal; and

means for controlling the virtual axis and carrying out the drive of the controlled axis and control of the I/O signal in a manner such that the controlled axis synchronously follows the virtual axis as a master axis in accordance with the position and the I/O signal state stored in said means for storing the position of the controlled axis and the state of the I/O signal.

4. (Original) The position control device according to claim 2 or 3, wherein said means for carrying out control of the I/O signal includes exclusive control means for preventing the I/O signal stored in said means for storing the state of the I/O signal and an I/O signal using a ladder from being written doubly.

5. (Original) The position control device according to claim 2 or 3, which further comprises means for selecting the I/O signal to be stored in said means for storing the state of the I/O signal.

6. (Cancelled)